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Vol. XII.

MAY, 1906.

No. 8.

# THE AGRICULTURAL STUDENT



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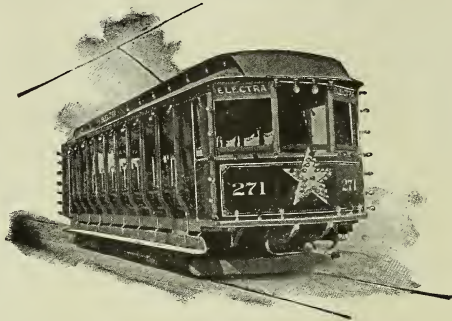
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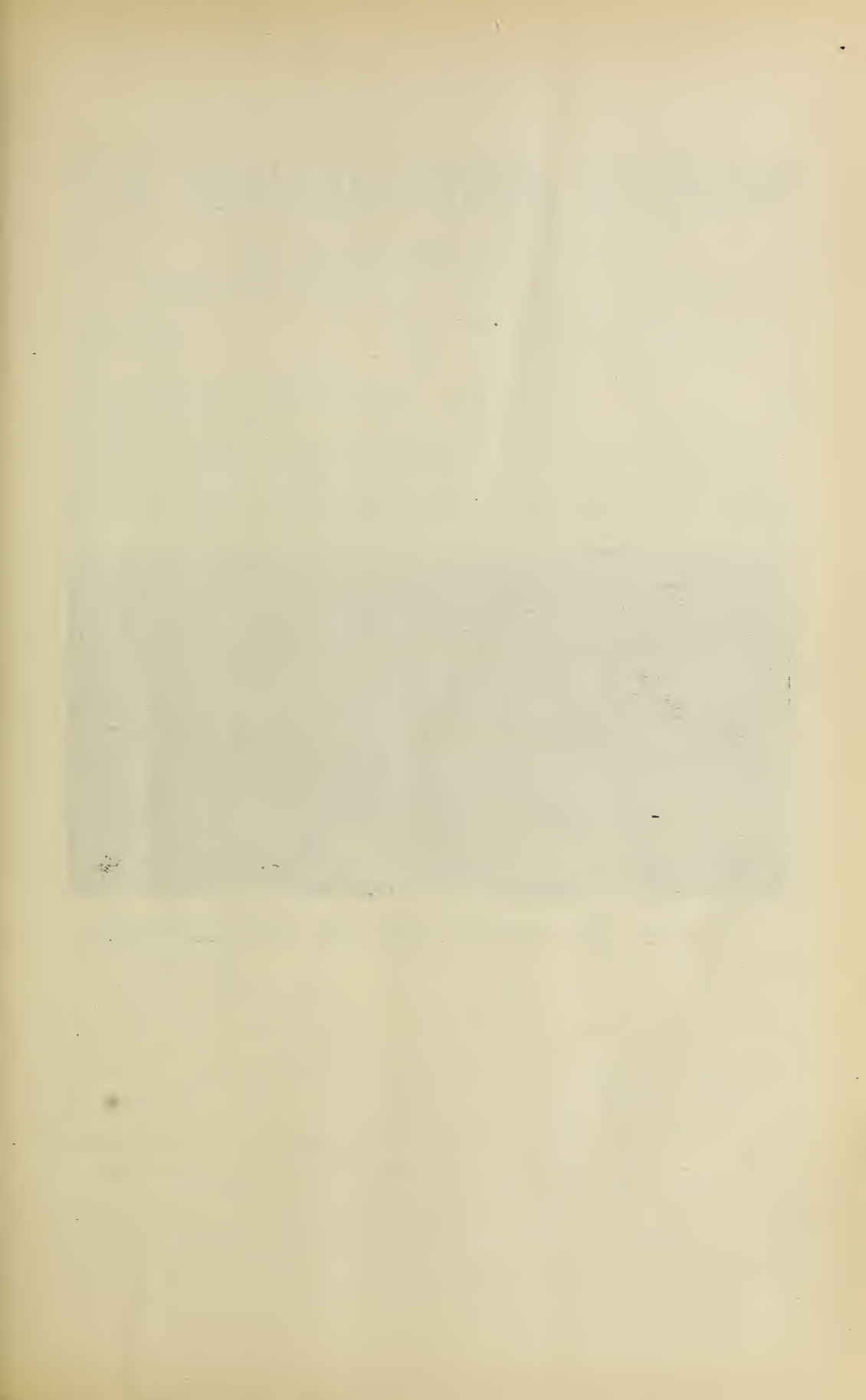
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VIEW OF O. S. U. HORTICULTURAL GROUNDS AND VETERINARY BUILDING

# THE AGRICULTURAL STUDENT.

VOL. XII. OHIO STATE UNIVERSITY, COLUMBUS, MAY, 1906 No. 8

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ALFRED VIVIAN.....	Advisory Editor
VERNON H. DAVIS.....	Business Manager

### STAFF.

E. J. Kitchen	S. H. Shawhan
N. E. Shaw	L. E. Call
F. D. Heckathorn	H. C. Ramsower

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## EDITORIAL COMMENT

Just before adjournment of this year's General Assembly, great things transpired. Great indeed for O. S. U., for the state has finally pledged itself to a permanent policy of maintaining one great University. Ohio and Miami Universities are limited to normal work and training in the academic courses. It was a hard fight for O. S. U., but she won out, thanks to the President, a number of her professors, and friends outside of the University. During the next two years Ohio State will realize a grand total of \$1,024,500 as the result of the appropriation bills, together with the levy by the Assembly. Ohio University at Athens gets a total of \$295,000 and Miami University at Oxford \$259,000.

In the next two years Ohio State will get \$324,500 for special appropriations as follows: Agricultural College, \$50,000; land and improvements, \$45,000; buildings (horse and cattle barns), \$30,000; live stock, \$10,000.

Engineering College building, \$75,000; equipment for civil engineering building, \$10,000; equipment for mines building, \$17,500; equipment for architectural building, \$5000; and chemistry



building, \$16,000. Also an appropriation of \$60,000 for a woman's dormitory. In addition to these amounts the levy for maintenance will yield for O. S. U. \$345,000 this year and probably \$355,000 next year.

Ohio University will get \$84,000 this year by the levy and about \$90,000 next year. In addition \$121,000 is given for buildings and improvements.

Miami University will realize \$74,000 this year from her levy and \$80,000 or thereabouts next year. She will receive special appropriations of \$105,000.

The total expenditure for higher education in the State of Ohio for the next two years will therefore be \$1,578,500.

O. S. U. gets a levy for the next two years of 16-100 of a mill. Ohio University 2½-100 for the Arts Department and 1½-100 for the Normal School Department. Miami University 2½-100 for her collegiate course and 1-100 for the Normal School course.

As set forth in the columns of THE STUDENT some time ago (February issue, page 102), we notice that the present occupations of the ex-students of the Agricultural course are as follows:

Farmers (dairy and stock farmers, managers of farms, gardeners, etc.) .....	433
Newspaper workers .....	7
Government employes .....	17
Agricultural teachers and experimenters .....	27
Practicing veterinarians .....	6
Students in other colleges .....	30
Miscellaneous occupations .....	150
Unknown occupations .....	98
Total .....	768

This shouldn't look so very startling to the advocate of "practical agriculture." Yet we still hear that ancient argument which is something like this:

"Scarcely any of the young men, after they have been away to the agricultural college, care anything for the farm or for farm life; the majority of them go into other business. The agricultural college educates the boys away from the farm," etc.

Now to this sort of philosophy we would say, look at the above figures. Of the total, 768, 433 are connected directly with the farm. Of the remainder, the agricultural teachers and experimenters are as truly farmers as those included in the column of 433. They may be able to help the agricultural cause ten times as much by taking up this line of work as by going back on the farm.

It is a bad thing though when men, incapable of combining theory and practice, get into these positions and, although this rarely happens, it is just frequent enough to keep up the above howl relative to the "book farming." We would all hail the time when we could have perfect men in these positions, but they will not come any quicker in this than in any other line of business.

In connection with the above figures if you have been reading the 'Alumni Notes' of THE STUDENT our premise ought to be pretty firmly established, viz., that the majority of the students who take the agricultural course at O. S. U., and we believe this will hold for all other agricultural colleges, do go back to the farm and are not, as we so often hear, educated away from the farm.

France's newly-installed President, M. Fallieres, is heartily in sympathy with agricultural movements. He was born and grew up on the farm. His grandfather was a blacksmith and a farmer, his father a registrar, and when he grew

to manhood he became proud of his humble origin on the farm.

When asked which of the duties he considered most agreeable and which disagreeable, he replied:

"Everything connected with the welfare of the country is agreeable. All unnecessary pomp and restrictions are disagreeable. I am fond of simplicity and I love my personal liberty. I shall try to retain them both. I shall try to get an opportunity to return to the soil a little while every year. My profoundest love is for the soil. I am a real farmer at heart and love the occupation. I love the companionship of domestic animals."

#### **Agricultural Athletic Association**

There was a meeting of the students of the Agricultural College on April 13 to organize an athletic association. Mr. "Ike" Cook, present captain of the O. S. U. track team, was chairman of the meeting. J. F. Van Voorhis was elected captain of the base ball team, and E. J. Kitchen manager. A committee was appointed to draw up a constitution and by-laws to be submitted to the association in the near future.

There are at present about thirty charter members of the association. The object of this organization is not only to encourage athletics in the college and university, but also to serve as a method of keeping the members of the Agricultural College in closer touch with each others and with the university. By always keeping in view the old adage "In union there is strength," there is no reason why that the Agricultural College could not have the champion football, basket ball and baseball team in the university. The secret of winning games is good team work. This fact was no better illustrated than last fall when the Ags. defeated the Vets. in football.

#### **Memorial of Wells W. Miller**

The Faculty of the College of Agriculture of the Ohio State University wishing to voice the feeling caused by the death of Secretary W. W. Miller of the Ohio State Board of Agriculture, and to place on record our appreciation of his services to agriculture, and of his character as a man, have prepared the following brief memorial:

Secretary Miller spent most of the years of his active life upon the farm and became widely known as one of the best farmers of Ohio. When barely of age he enlisted as a soldier in the Eighth Ohio Infantry, and served with distinction throughout the Civil War, being mustered out at its close with the rank of captain. When General McKinley was elected Governor of Ohio he appointed Captain Miller a member of the Board of Managers of the State Penitentiary, and he faithfully performed the duties of this responsible position until elected Secretary of the State Board of Agriculture in 1895. This position he held until his death, which was caused by a stroke of apoplexy and occurred at his home near Castalia, Erie County, Sunday evening, April 8, in the sixty-fifth year of his age.

Wells W. Miller was a man of royal parts. An enthusiastic agriculturist, he had the wisdom of a man of affairs.

By his good judgment, his promptness in action, his genuine manliness of character, he won the respect and esteem of all who knew him, and exercised a potent influence in all organizations with which he was connected. During his term of office as Secretary he greatly extended the scope of the State Board of Agriculture, and the improved State Fair, the more thoroughly systematized farmers' institutes, the scrupulously ex-

act fertilizer control, together with other important branches of work more recently established, bear testimony to his zeal and efficiency. Mr. Miller held positions of honor and trust in the State Grange, in the Midland National Life Insurance Company, in the Capital Savings and Trust Company, and in other organizations.

As an associate his cordial sympathy attracted all who came in contact with him. He had many friends because he showed himself friendly.

In all the relations of life he moved upon a high plane and exemplified the better qualities of our nature.

In the death of Secretary Miller we part from one who endeared himself to us by his manly qualities, while his loss to the state as an organizer and executive of great agricultural interests, and as an example of good citizenship, is great indeed.

To his bereaved wife and children we extend our heartfelt sympathy. We mourn with them, but we also rejoice in the richness and fulness of a life which makes all life braver and better.

WILLIAM R. LAZENBY,  
C. S. PLUMB,  
ALFRED VIVIAN,  
Committee.

The Agricultural Society met Wednesday evening, April 11, with Mr. H. P. Miller of Sunbury, Ohio, as speaker of the evening. Mr. Miller is well known to all Ohio stockmen, especially sheepmen, as he has become noted as a breeder and feeder of sheep. The subject of the lecture was "The Preparation of the So-Called Hothouse Lamb for Market."

### Our Girls

BY DOROTHY BLACK.

(Read before the Farmers' Institute, Fairfield County, March, 1906.)

How often in this day do we hear discussed the advantages and possibilities of the farmer boy and his future pictured in brilliant colors? Let us take but a few minutes to consider the advantages and possibilities of that other very important tenant of the farm, the farmer girl, and if possible, also picture her future.

In order to do this, let us take a glimpse into the life of the farmer girl of several generations ago. Her parents, of humble circumstances, were taking up their abode in a new country, surrounded on every side by hardships.

Her first lessons to be learned were those of bravery and industry. As the family clothing must be made by her hands, one might find her cheerily singing in harmony with the song of the spinning wheel; or see her bright knitting needles flashing in the sunlight or before the open fireplace as she learns her duty of sacrifice and kindness to parents, brothers and sisters. She is the important link to which the chain of the household is affectionately joined. Yet, she has not the opportunity of sharing the pleasures of knowledge awarded to her brother, who, by paying a tuition, attends a school and spends his evenings by the fireside reading over and over the few books he may chance to possess. Finally, if he shows an earnestness in the pursuit of his studies, he is sent to college. But the farmer's daughter under no circumstances receives a college education, for it is thought she is in need of no such training. Indeed she is found to be a royal homemaker.



Happily, this state of affairs will not always exist and the farmer's daughter takes her place in the country school, providing she still executes her home duties, and is found quite as competent as her brother. By and by as invention marks the progress of years, the farmer girl of today is relieved of that important duty and care of manufacturing the clothing. By this, then, do we mean to say that the farmer girl of today has insufficient employment to properly occupy her time? By no means can we say this.

Had you asked a farmer girl fifty or seventy-five years ago some questions pertaining to business or governmental affairs, she, without doubt, could not have told you. The business affairs were managed by father and brother and from a lack of papers and magazines she was not kept in touch with governmental affairs. The farmer girl of today is constantly solving business problems, and by the convenience of a daily paper she is kept in touch with the world's current events.

She takes great interest in the care of the domestic animals, and is a good judge of their value.

At every turn she comes face to face with nature, and in every living being finds a lesson taught by her Maker. What can create greater purity of heart, modesty of manner, sympathy for all living creatures and an everlasting love of God than a deep love and appreciation of nature? She, too, has "health that mocks the doctor's rules," and "knowledge never learned of schools." She, too, knows of

The wild bees morning chase,  
The wild flowers time and place;  
Flight of fowl and habitude  
Of the tenants of the wood;  
How the tortoise bears his shell,  
How the woodchuck digs his cell,

And the ground mole sinks his well.  
How the robin feeds her young,  
How the oriole's nest is hung;  
Where the whitest lilies blow,  
Where the freshest berries grow;  
Where the ground nut trails its vine,  
Where the wood grape's clusters shine;  
Of the black wasp's cunning way,  
Mason of his walls of clay;  
And the architectural plans  
Of gray hornet artisans.

In addition to her love of bird and insect life she learns to know their effects on the growing crops in her father's fields. Besides her complete and thorough domestic training which formed her earliest education, the farmer girl is master of a great number of trades. She is not only able to prepare a meal fit for any king, but by her magic hand can turn forth shining rolls of butter "good as gold." She has also learned to care for the poultry in such a way as to be a means of great profit to her. She is her own dressmaker and can artfully use the needle in beautifying her home. Besides these, she has been known to use the hammer and saw satisfactorily. Then when the daily cares are over, and the hallowed shade of evening falls around the dear old hearth, she can lighten the cares and burdens of the family circle by singing some beautiful song, or some musical instrument may respond to her skillful touch. She is ever a leader in the highest and best society and fills her place in the church, serving constantly her Master.

By a comparison of the life of the earliest farmer girl with that of today, we note that as time speeds onward her advantages and possibilities are steadily increased. And by receiving a still higher education can we not hope for the future of our girls to become the noblest and gentlest state of womanhood? The

kind for which the world is earnestly and anxiously calling, and may we not say with Whittier:

"Wher'er the wide old kitchen hearth  
Sends up its smoky curls,  
Who will not thank the kindly earth  
And bless our farmer girls?"

### **The Canning Industry of Ohio**

E. M. ALLEN.

Probably no one line of business has developed more in the last half century than the canning business. From a very humble beginning it has risen to be one of our foremost industries. Very naturally, in America, one of the first things that packers undertook to preserve was corn. At first, it was simply dried; later it was canned, but tartaric or boric acid was added to keep it from spoiling. But corn preserved in this way got more or less brown in a short time. To overcome that difficulty, chloride of lime was used to bleach it. These

chemicals, however, were somewhat expensive and so finally some enterprising New Yorker evolved a method of simply preserving the corn in its own juice, with a drop or two, on the average, per can, of a sugar and salt solution added, to season it. He patented his process, but another packer imitated him, regardless of the patent, and was consequently sued. The courts finally decided that the patent was unlawful, and with that decision, canning factories began to spring up all over the country. It is interesting to note that the first one west of the Alleghenies was that of C. E. Sears & Co., at Circleville, Ohio.

Today there are sixty-four canning "factories," so called, in our state, and they annually preserve immense quantities of corn, peas, tomatoes, string beans, pumpkins, lima beans, sauerkraut, kidney beans, baked beans, hominy, spinach, asparagus, succotash, beets, cherries, pears, peaches, apples, and berries of all sorts.



FORGING ROOM, HAYES HALL, O. S. U.



In the year 1905, there were 1,086,761 cases of corn, over 50,000 cases of peas, 171,320 cases of tomatoes, and 13,345 cases of string beans, packed by these sixty-four factories, not to mention the large aggregate of pumpkins, succotash, beets, etc. Usually there are two dozen cans to the case, so that the total number of cans is enormous.

This much has been said to convey an idea of the rapid growth of the industry and of its present importance in our state. But of its workings even less is generally known than regarding the volume and nature of its business. In fact there seems to exist in the minds of a good many people a vague notion that canning factory produce is inferior to start with, and isn't improved any so far as cleanliness is concerned, in the handling. A trip through an up-to-date factory is the best cure for such an impression.

In the first place, nearly all the corn, peas, beets, etc., which are canned, are grown under contract between farmers and packers, and from the best purchasable seed. The farmer agrees to give careful attention to the growing of the crop or crops, and the packer agrees to pay certain prices for certain qualities of product; the better the quality, of course the better the price. And as a specimen of the premium put upon quality, it may be said that a factory in which the writer has worked for several seasons past, pays exactly three times as much for first-class as for second-class string beans, and twice as much for second as for third class. The classes in this case are largely determined by the size of the beans, and the grower generally pays more for his seed than third-class beans grown from that seed will bring him. As the marketing time approaches, field men are sent out from

the factory to inspect the crops, make suggestions to the farmers for their improvement and to tell the farmer exactly when his produce should be brought in, in order to be in the best possible condition for canning. It will be obviously impossible in small compass to trace the various kinds of goods from field to labeled can, and as corn is packed in large quantities it may be well to confine our attention to the method of handling it. When a farmer telephones that a certain field of corn will be ready, say, the next day, a field man is sent out to look at it. If in his opinion it is ready, the farmer is ordered to begin hauling. The corn is brought in with the husks on, in large wagon beds, and on arrival at the factory, wagon, horses, driver, and load are all weighed simultaneously on a pair of street scales. The gross weight of the load is recorded, and the farmer drives around to the husking shed and empties his load. He then drives his wagon back onto the scales, and his tare weight is obtained. The net weight is then figured and a receipt for the load given. Meantime his corn along with a lot more of the same variety is being husked. After the husking, all bad spots are cut out and the corn, in baskets, travels on a carrier to another building. Here the baskets are set off and their contents dumped into a silking machine. This consists of a series of rollers and brushes which remove the silk very effectively. The silked corn pours out the other end of this machine into baskets again, which are taken to the cutting machines. Into these the corn is fed, one ear at a time and yet very rapidly, and a lot of knives forming a somewhat flexible circle just a little larger than a cob, cut off the corn. It slides down a metal chute to another silker, while the cobs drop onto



a carrier and are delivered to wagons in the street or alley which haul them away. This second silker is necessitated by the fact that there is some silk in the channels between rows of corn which the brushes cannot reach, and is a very ingenious arrangement. It simply consists of a lot of parallel wires arranged side by side and under each other, too. Through these the corn drops, and any silk that may be mixed in, cannot help lodging on some of these wires. From here the corn passes down another short chute to a mixer, where the sugar and salt solution mentioned above is mechanically stirred through the mass. Another chute carries the corn, now ready for cooking, to a cooker, where it is heated by a steam coil to 180° F. This degree kills certain forms of bacteria. Mechanical plungers now force it into cans which pass along a carrier to a boy who drops a cap on each one as it passes. This cap fits into a groove already on the top of the can. Next the cans go to a "capping" machine which solders the caps on, twelve at a time. The cans, full of corn and soldered tight, are now placed in large, round, flat crates made of iron bars. These crates are lowered by cranes into immense cooking kettles, the lids screwed down tight onto the kettles, and steam turned in. The corn is here cooked thirty-seven minutes at 240° under pressure and in the sealed cans. Then the crates are lifted out and into a long cooling-tank. This is full of cold, flowing water, and the crates pass slowly along its bottom on another carrier. It takes one crate a half hour to go through this cooler, and on emerging the cans in it are ready for stacking and subsequent labeling.

Thus the corn is handled mechanically at almost every step, and other crops

are dealt with in much the same way. So that there is practically no chance for dirt to get in,—really less chance than in a first-class kitchen. These factories are doing an immense service for our people, and the writer wishes success to them!

---

Professor Plumb recently received a gift for the University in the form of the flock books of the Cotswold Sheep Society of England, comprising fourteen volumes. Also a set of National Pig Society books have been secured at a nominal cost and this virtually completes all sets of British swine herd books.

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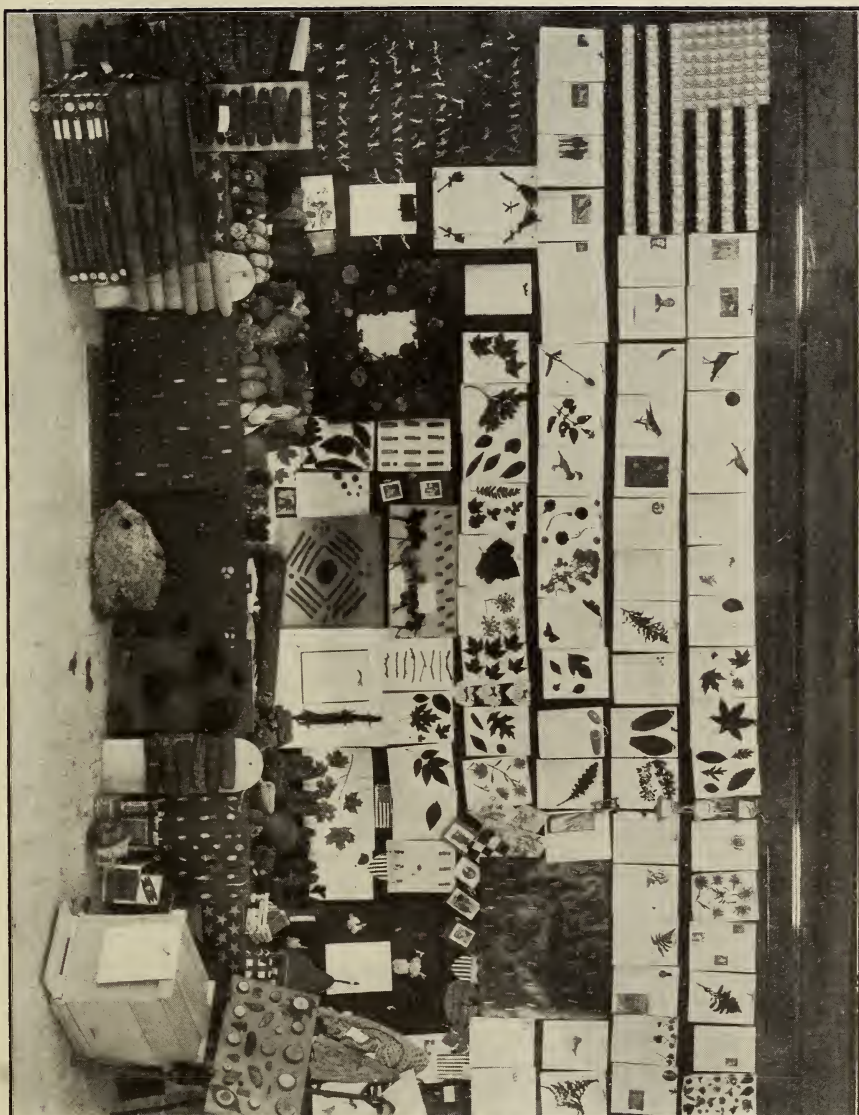
#### **Appropriation for the Agricultural College**

Members of the Agricultural Faculty and all the Ag. students have been shaking hands with each other and expressing their overflowing gratitude toward the General Assembly of Ohio for the liberal appropriation granted in last session. As mentioned in the editorial, \$135,000 was given.

Eighty-five thousand is to be expended the first year, \$45,000 of which will purchase 92 acres of land, \$10,000 for live stock, and \$30,000 for buildings.

The second year \$50,000 will be available for buildings, which will include new horse barn, cattle barn and judging pavilion.

The buildings will be constructed with the best of brick, and they will have excellent sanitary appliances. They will be equal to or superior to the grandest agricultural college buildings for stock in the United States, and will be situated northwest of the Veterinary Laboratory.



DISPLAY OF WORK DONE BY BATH TOWNSHIP HIGH SCHOOL, GREEN COUNTY, OHIO

### The Strawberry

S. B. STOWE.

The time of year will soon be with us when the country lad searches for the first tiny wild strawberry. Perhaps he who reads this can remember similar events in his own life. Indeed what can compare with a big dish of fresh berries just from the vine? As Waldo F. Brown has said: "A large dish of berries smothering in rich Jersey cream is enough to melt the mouth of any man." For four weeks the farmer can feast upon the choicest fruit that nature has given and, it may be added, one of her most peculiar fruits.

No other small fruit has been grown so extensively as this. Its cosmopolitan character and its delicious flavor have served to make it popular wherever it is grown. The season at which it ripens finds man eager and hungry.

But as students we want to know something about the fruit; what it is; its history or evolution. The berry is a fruit and like all fruits, it is a modified organ for reproduction. The edible part consists of the fleshy pith and a still more fleshy cortex, between which is a narrow zone of fibro vascular fibers. From this zone similar branches extend to the achenes or as is commonly called the seeds. Externally a ripe berry is red and has a slightly tufted appearance, with a few scattering hairs over its surface. Over this receptacle, as it is called, numerous seeds are found. This is a characteristic of this plant and the point where it differs from other members of the Rose family. It has been likened to the "hips" of the rose turned wrong side out. Of course, this was not always so marked, as it is now, for the hand of the horticulturist has taken advantage of the many variations in the fruit of this plant

which gave promise of an improved quality or quantity.

The strawberry is a fruit of rather modern development. The first cultivated berry was known as the Fressant, and was grown in France about the year 1660. It was a small variety with fairly good flavor, but as all the types of European origin, it has disappeared almost entirely. The cause for this was the discovery of an American berry that in flavor and size far surpassed it. This berry was found growing in the eastern states, especially in Virginia. Its natural and hardy growth coupled with its superior flavor caused it at once to become popular in all Europe. But this proved to be only temporary, for shortly afterward the Chilian berry from the Pacific coast was imported, and from it all of our modern varieties seem to have sprung more or less directly.

From a group known as the Pine strawberry all of our present varieties have been originated. The ancestry of this Pine berry has occasioned considerable discussion. Every effort possible has been used by the American horticulturist to prove that it is of American origin. Our own national pride prompts this, but when such a man as Bailly gives up the fight and has to acknowledge that no characters have yet appeared to unite it with our own native variety, perhaps it is useless to attempt further research. All things point to the Chilian berry as the forerunner. The origin of this genus is uncertain, but it does not seem to be an old plant. Indeed the statement is made that it grew up and evolved under the eye of the botanist without being observed.

The growing of strawberries upon a commercial scale was not attempted until the year 1830. In the State of Mas-



sachusetts, Hovey developed the first standard variety which bore his name. Later James Wilson grew another variety which he also named in honor of himself. This berry is still popular in the northern states. Thousands of varieties have been put before the public since that time. They have come mostly through variation and cross-breeding, there being very few and perhaps none that are pedigreed in the strict sense of the term.

A consideration of the merits of the different varieties has occasioned much experimentation, and from the experiment stations in all part of the country bulletins are published from year to year giving the results of their tests.

Thus we see a new variety has to run a severe gauntlet, where prejudice or favor do not interfere. Only a comparatively few varieties have stood the test of time, and everybody has heard of the Crescent, Bubach, Warfield, Michael's Early and others which are grown successfully throughout the whole country. While it is a very cosmopolitan plant many widely different yields have been secured in the same variety. But no doubt the advice that each grower obtain his plants from his nearest reliable nurseryman is good and based upon facts.

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### The Disc Cultivator

S. H. SHAWHAN.

The use of the disc cultivator is not general but seems to be restricted to certain sections of the state. It is used quite extensively in Southeastern Ohio and came into use in this section eight or ten years ago, or about the time when riding cultivators were becoming popular, and as the disc was also furnished with a seat it immediately met with favor.

The discs are usually fourteen or sixteen inches in diameter, three on a side,

and may be guided either by a horizontal lever or by the feet. However, those guided by the feet give the best satisfaction. The draft, in loose, mellow soil is a little greater than that of the shovel cultivator, as the disc is a heavier implement, but in hard, packed soil the draft is considerably lighter.

Many farmers tend the corn entirely with the disc, but it is doubtful if this is the best practice as it requires great care to keep from ridging the ground too much, and often it is advisable to get closer to the corn the first cultivation than is possible with the disc. The great advantage, however, is the thorough stirring and fining of the soil which is possible by the use of this tool. Where a shovel cultivator is used there is always a space between the shovels where the dirt is not stirred and in subsequent cultivations there is a tendency for the shovels to follow the same path they traversed before. This hard space, of course, varies with the number of shovels used, but the rolling motion of the discs stirs the entire area, and the weeds, if there are any, are torn loose and turned upside down, leaving the roots exposed to the sun and thus preventing any possibility of further growth. The disc has been used very successfully in bottom grounds which were overrun with morningglory and pea vines.

The rolling motion of the disc is a decided advantage in sod fields, or where coarse manure, cornstocks, or any other litter has been plowed under. Here the shovels would catch the obstruction and possibly tear out the corn while the disc will either roll over it or cut it off.

It is possible, with the disc, to commence the cultivation of a field that is very uneven and cloddy and when the corn is "laid by" to have the ground fine and level. This is accomplished by the

pulverizing effect of the discs together with the use of levelers which follow the discs, fining and leveling the soil, the extent of which is determined by the amount of pressure applied.

It is a common practice the first plowing to throw the dirt away from the corn and leave a space in the row usually from three to six inches, depending on the kind and condition of the soil, the size of the corn and last but not least on the skill of the operator. The first time a man tries to operate one of these cultivators he wants to throw it in the fence corner as he seems to cut out more corn than he leaves, but after a few hours' work he becomes more proficient and enjoys this task.

In this first plowing, which should be deep, the center is not loosened as it is by the common bar plow and this may be either a benefit or a detriment, depending on the condition of the soil. This process of throwing the dirt away

gives plenty of loose soil for the tending of the crop. Before the second plowing, the ridges in the middle of the row, if they are at all high, should be rolled down, thus leveling the ground and at the same time further pulverizing the soil. The soil may then be thrown back either with the disc or shovel cultivator. If the disc with the levelers is used the ground is left fine and even and in this way a dirt mulch is easily secured.

It requires considerable care and skill to keep the ground level, and, in truth, it can hardly be done for more than three plowings for the action of the discs tend to carry the dirt from between the rows in to the corn.

It is a common practice to keep the land level until the last plowing. Aided by the levelers the soil is kept in a fine condition and it is an easy matter to secure an earth mulch.

Then at the last plowing the levelers are taken off and a ridge is thrown up.



VETERINARY HOSPITAL, O. S. U.

This would be objectionable to the advocates of level cultivation, but as the ridges are rounded and smooth, it is doubtful if the ground dries out any faster than it does where the last plowing has been done with the shovel cultivator as the shovels always leave more or less of a furrow.

It has been claimed that the discs cut off the roots of the corn plant, but as they can be set to run shallow next to the row there need be no danger along this line. Experiments with both the disc and shovel cultivators show no decided advantage to either except sometimes in dry seasons a little better crop was secured by the use of the disc.

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### **Social Phases of Farm Life**

O. B. SHEPARD.

Ohio has held a high rank in the agriculture of our country since its settlement in the latter part of the eighteenth century. The opening of the fertile valleys of the Miami, Scioto, Muskingum and other rich lands of the state drew the best blood of the east. While Ohio does not rank first in the production of any one of the staple agricultural products of the country; neither does she rank low in any of them, showing a typical agricultural state. It is an interesting fact that in the leading states in agricultural products, the percentage of farms operated by owners was the highest in our own state.

Some of the problems confronting this industry have been caused by the transition period in which we have passed from hand labor to machine labor.

Almost as important as the improvements of farm machinery and its influence upon agriculture have been the in-

creased facilities for transportation. When Ohio was first settled, the canals and the national roads were the highways of commerce. Live stock was driven across the mountains to eastern markets and the grains were floated down the river to southern markets, but today our state has become a network of railroads, connecting us with all the large markets of the world. They have drawn the state into competition with the prairie lands of the Mississippi Valley and the wheat lands of the Northwest and the live stock from the ranches of the western states. The circle of competition has widened as well as the circle of markets, and today the farmers of Ohio must compete with the farmers of South America, Europe and Australia in the marketing of their products.

The social changes that have taken place have been almost as great as those already mentioned. The rural mail delivery, the telephone and the interurban electric cars have revolutionized life in the country and have taken away from it its isolation. Now then, what the farmer most needs is the retention on the farm of his most valuable product—the boy. The problem has been how to keep him there, and this is solved when you can show him profit and pleasure in the country. The cities have made large drafts upon the rural population. They have found the country boy desirable from every point of view. He has a strong, vigorous constitution, a healthy mind, the ability to stand the pressure of that vigorous, strenuous life that comes with the fierce competition in great cities. They absorb the young man from the country, and this is one reason why farming interests in certain localities have languished. In many districts you will find only the old people remaining, the boys have gone to the city. The



parents were too slow for them. They have demonstrated by their successes in the city that they were the best products of the farm. Plan for his amusement and recreation. This is essential since we are social beings. Science has freed the mule from the street cars. Why not free the boy from some of his toil and give him a better opportunity for the enjoyment of some of the pleasures which everybody should have an opportunity to participate in in this world? Parents owe it to their children and to society to surround themselves with such means of inspiration and culture as are found in the best books and choicest pictures, so that their children may find pleasure and amusement in the home.

If you do this you can keep the boys on the farm to engage in the noblest profession of man. Make farming a live business and it will attract the boys, who are to become farmers, and keep them where our country needs them—as the backbone of the great conservative force of our republic. It is on this broad, firm foundation that our institutions rest, and organizations of this character indicate that these foundations will not only remain firm, but will be strengthened and broadened, all for the welfare and happiness of a great free people.

The farm affords a wonderful opportunity in the training of children which other places lack—such as teaching kindness to dumb animals, lessons in beauty and harmony in nature, lessons in thrift and industry from the bees, ants and birds. But with due credit to the helpful effect of good farming on the character of a child, it does not effect him as do his toys, his teaching and his reading. Children should be given a liberal education that they may have a taste for better literature and nobler ideas—and

rise in intelligence above neighborhood gossip. Such riches as these cannot be embezzled by any defaulting cashier, washed away by any turbid stream or consumed by any fire. What a glad world this would be if every creature in it were to do all he could to lessen pain and increase happiness. No one of us is of much account when alone. So we must help one another and labor in harmony for higher and broader aims. Time is like a ship which never anchors; while we are on board, we had better do those things that may profit us at our landing than practice such things as will cause our commitment when we come ashore. Within each of us lies the desire to do something helpful in our community, which characterizes the really great man or woman. Sometimes we feel sure the world is growing better, then again we are just as firmly convinced that it is going to destruction just as readily as possible, but let us console ourselves as did the grateful gentleman who was suffering great pain from an attack of the gout, when he said: "Consider what the gout might be were I a thousand-legged worm."

In order that the world may seem better and be better, we should cast about constantly for opportunities to help others into the pleasant ways of wisdom, virtue, usefulness and happiness. And in the end will discover that the one who lends a helping hand, will himself be helped most of all.

Society is responsible in a great measure for so many of our criminals. To overcome some of the evils, a social reform is needed. Then the question arises: "Who are the ones to place this social reformation before the public eye?" Certainly the answer must be—it is the farmer. Whose hand is it that

is felt today to sway the greatest influence anywhere upon the globe?

It is the farmer. Whose hand is it that fills the hold of the vessel that plies the mighty deep? It is the farmer. Whose hand is it that fills the haversacks of the boys over in the Philippines? It is the farmer. Then it is your right to be an American, but it is your duty to stand by the teaching of Americanism. Let us be heroes in the strife and occasionally ask ourselves this question: "Am I doing my best?" Life is never so sweet as when we annually pass each milestone and look out beyond and see the shadows are falling thick and fast. Character is never so appreciated by any of us when it passes us as a golden age. And as we pitch our moving tents one day's march nearer home, then it is we realize the meaning of living lives of integrity, honesty and sobriety. These are the rights of the American, but it is your duty, my friends, to stand by the teaching of the Anglo-Saxon race.

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### The Feeding of Lamb for Market

F. D. HECKATHORN.

During the past year, and especially this winter, the markets have been overtaxed with sheep. It seems that the farmer east of Chicago has followed the example of his western brother and is now devoting much time, money and energy to the production of mutton sheep which will fill the requirements of the big markets such as Chicago and Buffalo. Sheep are now going down in price and this overproduction, as it might be called, will tend to still lower the prices, and then a large class of feeders will sell their flocks and go to raising some other line of live stock. There is a tendency among our farmers to start in feeding

that breed which is bringing the best price and continue this just so long as the good prices hold out. This is the case with sheep. Of course, a certain class of men raise sheep all the time and it is these men that reap the greatest rewards. But there is money in sheep and especially so if a superior quality of mutton is put upon the market.

The best quality and probably the largest amount of mutton put upon the market is supplied by lambs from three to seven months old. The lambs should be marketed as soon as possible, for they make their most profitable gains in the first few months, and then the market pays better for younger lambs.

If the lambs are intended for breeding purposes the rations should be such as will stimulate a strong, healthy growth rather than add fat.

After birth the young lamb should be given the ewe's milk if it is not able to secure the milk itself. The ewes need feed which will enable them to give plenty of milk, as the growth of the young lamb during the first month depends to a large extent upon the amount of milk it receives. A ration of three parts bran and one part oil meal, together with clover for a roughage makes a satisfactory ration.

The lambs before weaning should have access to small pens, apart from their dams, in which they may eat grain. As soon as the lambs are able to eat grain, a little bran or oats can be placed in small troughs in the feeding pens. Care should be taken not to overfeed them. The frequent feeding of grain is desirable as the lambs' capacity is very small and it cannot consume much at a time. The grain should be given before the lambs are weaned so that on weaning they will not be seriously affected by the change.

Professor Craig says that oats are the best and safest feed on which to start the lambs. Then in about ten days a little corn can be added and this continued until equal portions of corn and oats comprise the feed. In two or three weeks cottonseed meal can be allowed to gradually take the place of the oats until the ration is two parts corn and one part cottonseed meal. Some claim that cottonseed meal, being very high in protein, is injurious to lambs. If fed judiciously in small quantities no bad effects will result. It is a good plan to feed some roughage such as clover or alfalfa along with the grain ration.

In Ohio, alfalfa and corn silage, especially the former, are now being fed to young fattening lambs. Mr. Joseph Wing highly recommends alfalfa for young lambs.

Better results are secured if the feed is given regularly at the same hours each day. The sheep will learn when to expect their feed and will be more quiet. Too much feed is worse than too little, and much care must be exercised with the lambs to avoid indigestion. The preparation and feeding of the proper grain ration displays the strong or weak

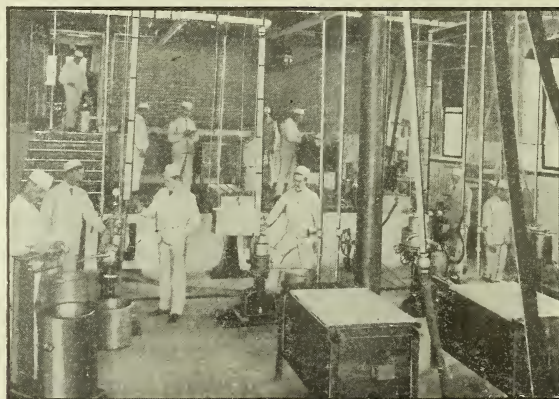
points of a good feeder as the case may be. The condition of the sheep will always show up the feeder, providing he has the proper grains and hay from which to select. If he knows the kind and amount of feed to use the application is a simple matter.

Lambs should be guarded from disturbance and excitement as much as possible, as the bad effects of these always show falling off in weight or a check in growth for a short period.

The shelter for the early lambs in the winter is very important. The wind should not be allowed to strike them and the floor or ground on which they lie ought to be dry and clean.

If the lambs are confined in a barn, ventilation should be provided for, as pure air is absolutely necessary. Pure water is almost as essential as the feeding ration itself. A supply of salt at regular intervals is necessary, as it helps their appetite and seems to do them good.

Roots, rutabagas and mangels are often fed to keep up a healthy condition. Corn is regarded as one of the best grains to fatten sheep. However, the continued use of it alone will cause their appetites



DAIRY LABORATORY, TOWNSHEND HALL



to fail and will very lively cause intestinal disorders. It is wise then to feed some clover, roots or alfalfa along with the corn to counteract the bad effects of the latter when fed alone.

Linseed cake is an effective fattening feed and the sheep like it. Rape is a succulent food which gives good satisfaction in quick production of lambs for market. It can be grown in the late summer and fall and makes an excellent pasturage for fall and early winter. The sheep should not be allowed to eat too much rape as their is danger of bloating.

Cornmeal ranks high for a feeding ration.

The fact is clear that a ration of mixed grain is desirable for lamb feeding. The sheep like it better than the unmixed grains, eat more of it and consequently put on more fat.

Many of the sheep fed here in Ohio are shipped in from the West. George Wilbur feeds out winter lambs and this is often called the hot-house plan. He buys grade western ewes already bred so that the lambs come in October and November, or as early as possible. He fattens the ewes at the same time he fattens the lambs and gets them off to market as soon as he can, the lambs weighing 40 to 50 pounds at the time of shipping. These sheep are fed alfalfa, silage and clover along with the grain ration and excellent results are secured. The best market for these hot-house lambs is at New York City.

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#### **Agricultural Extension Work**

The dedication of the Bath Township High School of Green County, O., took place on March 16, 1906.

There are at present seventy agricultural clubs, including 25,000 children, in

the State of Ohio. About one-half of the counties of the state are represented in this work. There are twenty-two township high schools teaching agriculture as a science. This includes 11 per cent. of the whole number.

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Superintendent Groover of Worthington, together with twelve boys, has rented several one-fourth-acre plots, cash rent, to be used as gardening this season. Agricultural magazines and textbooks, such as Baily's Principals of Pruning, are used. The gardening is counted as laboratory work.

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#### **University News**

Dr. Kellerman returned from his explorations in Guatamala during the last week of March, a month earlier than had been intended. This was because of the prevalence of yellow fever in that district. Although his time was shortened, Dr. Kellerman reports a very satisfactory trip as some very rare specimens were secured; also many duplicates for exchange.

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A new system has been adopted at O. S. U., the advisory system taken up by the Arts Department. It is intended to assist the students in that department and is something like this: Upon registration for each term each student is provided with a printed list of the professors and associates of the Arts College, with the request that this student designate from three to six instructors preferred as advisors. From this data a schedule will be made up with each professor and his flock. Elective studies will hereafter be made subject to the approval of the advisor.

This is supposed to make up for the lack of personal attention to each stu-

dent by the professors, which has been a serious criticism of the University heretofore.

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Professors Lazenby, Price and Lord attended the funeral of Secretary W. W. Miller on Thursday, April 12.

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On April 2 the local alumni, 110 in number, entertained the O. S. U. men of the General Assembly and other devoted legislators, at a 6 o'clock dinner at the Ohio Club. Mr. L. F. Sater acted as toastmaster. Those who responded were: President W. O. Thompson, Speaker Carmi A. Thompson of the House of Representatives, Representatives E. L. Lybarger, Eagleson, Metzger, Wertz, Professor Knight, R. Grosvenor Hutchins, President of the Board of Trade; Secretary of State L. C. Laylin, Senator Gayman, H. J. Booth and Dean J. H. Outhwaite of the Law College.

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#### **Franklin County Alumni Hall Election**

As the constitution now stands the Franklin County Alumni Association admits alumni, ex-students and members of the instructional force at O. S. U. Officers for the coming year are as follows: President, George W. Rightmire; vice-president, William Richardson; secretary, W. L. Evans; treasurer, William H. Page.

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The Sigma Xi Society held a meeting in the Physics Building, Wednesday evening, April 11. The speaker of the evening was Dr. Thomas H. Haines of the Department of Philosophy. The subject of the lecture was "A Sketch of Experimental Psychology."

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A new member has been added the faculty, Clyde T. Morris, C. E., '98, who has assumed the duties of associate pro-

fessor in bridge engineering. Previous to his present employment he was connected with the King Bridge Company of Cleveland.

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Under the management of Professors MacGruder, Caldwell and Andregg, the junior engineers made a trip through the East. Their first stop was at Pittsburgh, where they visited the Westinghouse works, Heintz Pickle Co. at Allegheny, and the National Tube Co. at McKeesport. From here they went to Niagara Falls and after taking in the sights here and later at Buffalo, the party returned to Columbus, tired but well satisfied with the trip.

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Professor Guthrie is out for a few weeks' work in the French Brothers' District near Cincinnati, where they have twenty skimming stations.

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A span of "sugar or plantation" mules have been purchased for the University. These mules were brought from Paris, Ky., and are regarded as a high class pair, weighing 1350 pounds each, and being 16 $\frac{1}{4}$  hands high. They are especially important for instructional work.

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The College of Agriculture is indebted to Senators Gayman and Brandt of this district and all agricultural organizations of the state for their combined efforts in securing the appropriations.

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A dinner was given at the Hotel Hartman, Friday evening, April 13, for the Senators from this district, who were instrumental in obtaining the liberal appropriation for the Agricultural College. This dinner was given by the Agricultural Faculty by whom many interesting after-dinner speeches were made.

**Alumni Notes**

Fred L. West, B. Sc. (Agr.), '05, whose present address is Bloomingburg, Ohio, paid the University a short call during the second week of April. Mr. West is located on his father's farm and during the last winter fed quite a number of cattle for the market.

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The friends of Garfield R. Nash, ex-'07, will be pleased to hear that he has accepted an excellent position as foreman of a farm near Shelburne, Vermont. This farm—the Shelburne Farm—is located on the banks of Lake Champlain and consists of 4000 acres. Mr. Nash has worked at the barns during his three years in the University, during which time he was a steady and consistent worker; and this is the reason why he received the appointment.

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J. E. McClintock, B. Sc. (Agr.), '06, who has, for some time back, been in the employ of the Bureau of Plant Industry, Agr. Dept., Washington, D. C., is located at Ames, Ia., where he is carrying some experiments in soil testing.

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When last heard from, David A. Givens, ex-'99, was located at Culver, Minn., and was in the lumber business of that place.

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Clark J. Halverstadt, ex-'05, whose present address is Leetonia, Ohio, is employed in farming near there. We understand that Mr. Halverstadt is specializing in live stock and we wish him success in his chosen line.

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Otto L. Eckman, ex-'04, lately in the employ of the Bureau of Soils, U. S. Dept. of Agr., Washington, D. C., and who was assistant in the Soil Survey, has

again entered the University. Two years ago, at the end of the winter term, Mr. Eckman entered the government service and one year ago, as his friends remember, he took unto himself a wife. Both Mr. and Mrs. Eckman are enrolled as students; the former will complete his course in agriculture and the latter has registered in the Arts Department.

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Fred R. Hackman, dairy course, '04, is buttermaker near Delaware, O.

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John E. Graham, ex-'97, is at present living at Raccoon Island, O., where he is engaged as a farmer and fruit grower.

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Walton E. Groves, short course class of '06, whose address is Holloway, O., R. R. No. 1, is farming near that place.

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Harford B. Goddard, ex-'00, is located at Vincent, O., where he is farming and also dealer in merchandise and implements.

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Chas. P. Fox, B. Sc. (Agr.), '90, M. S. A., 1895, is in the employ of the Diamond Rubber Co. of Akron, in which capacity he acts as analytical chemist. Mr. Fox's present address is 395 Doyle street, Akron, O.

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Clarence B. Frink, dairy course of '01, whose address is Larkspur, O., is manager of the Carl & Frink Creamery Co.

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J. Fred Gerdeman, ex-'04, is engaged in farming near Ottawa, O., R. R. No. 1. Mr. Gerdeman, we are told, is making a specialty of breeding live stock.

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Paul Fisher, B. Sc. (Agr.), '91, D. V. M. (O. S. U.), '92, is State Veteri-



narian for Ohio, with address, Station "A," Columbus, O.

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George A. Flickinger, B. Sc. (Agr.), '98, whose address is Concord, Tennessee, R. R. No. 1, is farming near that place.

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E. W. Roush, short course class of '07, writes: "I have been and am yet trying to superintend some township schools, Thompson Township, Seneca County, O., and at the same time have been doing all I can to encourage the farmers and the farmers' boys and girls, and to get them interested in the extension work. The last I have found somewhat difficult, as the farmer of Ohio, is a pretty conservative fellow, and has lots to learn from the western "push." They think that scientific agriculture is something new-fangled like some other fads that have found their way into the schools—especially the city schools. Too many of our farmers are like some country school teachers that we hear about; they attend institutes and listen attentively and carefully to what is said and go home saying, 'Well, that may all be, but I do not believe it.'"

Mr. Roushe's address is Lindsey, O.

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Emma C. Fast, ex-'06, is located at 356 Gordon avenue, Cleveland, O., and is at present engaged as salesman.

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Ray C. Doneghue of this year's graduating class will, upon finishing his course, take up government work under the Agricultural Department, Washington, D. C., Division of Soils. Mr. Doneghue has arranged to be with the department from the time of his graduation till the end of the year. He is to begin work in the soil survey in eastern Illinois.

Everyone who knows "Donny" is pleased to hear of his appointment, but we overheard one of the matrons on the milk route say that she thought it was too bad indeed that they had to let that boy go; he had such a nice jolly way with him.

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The following dairy students have returned to their home farms to engage in buttermaking: Wm. G. Rehl, Zanesville, O.; T. L. Pulsifier, Medina, O.; Asa Turner, Xenia, O.

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H. O. Jansen is employed in the creamery at Maddock, North Dakota, at \$75 per month.

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W. C. Barret is buttermaker for the Pittsburgh and Ohio Dairy Co., in Pittsburgh.

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The official testing of Holstein-Friesian cattle in Ohio has been turned over from the Experiment Station to the Dairy Department of O. S. U.

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Earle J. Milner, student of last term's dairy class, is conducting a series of tests for A. D. Thompson, Indianapolis. In two weeks' test one cow gave 1000 pounds of milk containing 30 pounds of fat, equal to 42 pounds of butter.

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Roy J. Perkins tested cows for H. T. Allen near Chardon, Geauga County, putting three cows in the advanced registry. Other tests will be made for Peter Schmidt, Cleveland, O., and for O. C. Smith & Co., Parkman, O.

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Lorenzo D. Fauver, short course class of '04, is farming near Wauseon, Ohio. Mr. Fauver is making a specialty of breeding fine wool sheep.

J. C. Foster, ex-'02, is farming near Higby, Ohio.

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### Agricultural News

The Year Book of the Department of Agriculture for 1905 contains 850 pages and exceeds all past editions in size and in quality.

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The House Committee on Ways and Means has agreed to report favorably the bill removing the internal revenue tax of \$2.20 per gallon on alcohol which has been rendered non-drinkable. This denaturized alcohol could be sold as an illuminant and as fuel, and thus open a vast field of economy and profit to the farmer. The bill must run the gauntlet of the influences of the wood alcohol trust and the Standard Oil trust. The plan of campaign against it has not yet been outlined, but it probably will be "underground," as nearly all such campaigns are. Farmers should interest themselves thoroughly in the passage of this bill.—Breeder's Gazette.

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We know that soils are productive when supplied with nitrogen, phosphoric acid and potash, and are supplied with organic matter and are made sweet with lime so that bacteria can work. The nitrogen and organic matter, Professor Hopkins would get in the legumes and whatever stable manure was on the farm; the potash he would free from the soil stores by use of organic matter; the phosphorus he would buy in a cheap form and the acid he would remove by the use of lime. So lime, phosphorus and legumes become the only essentials in his system. It is simple and easily grasped, and applies to all our so-called clayey soils, I assume, and to all soils whose analyses show the usual large amounts

of potash in soils and subsoils.—National Stockman and Farmer.

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A bill has been passed by the legislature of New York to prohibit docking or the importation into the state of docked horses.

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Fifty thousand dollars has been raised toward the endowment of the new professorship of lumbering in the Yale Forest School; \$150,000 is wanted. In fourteen western states \$44,000 was raised from sixty contributors representing largely corporations and firms.

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Professor Howard Edwards, who holds the chair of Modern Languages in the Michigan Agricultural College, has accepted the presidency of the Rhode Island Institution to succeed Kenyon L. Butterfield, recently elected to Amherst College.

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A large asparagus farm of 125 acres near Ogden, Utah, expects to harvest its first crop this spring. Nearly all the crop will be canned.

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Eleven head of registered Galloway cattle are to be sent to Sitka, Alaska, papers for which have been made out by the Kansas City Bureau of Animal Industry. The government intends to try these cattle in that climate and will make an effort to introduce cattle raising there.

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It is estimated that the Georgia peach crop has been damaged by recent cold nights to the extent of \$200,000.

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That the United States will eventually produce a large portion of the tea used here is practically assured from the encouraging results obtained on the Amer-

ican tea plantation at Pinehurst, S. C. Government authorities have completed a soil survey of the rice soils on Copper River, S. C., and find that they are well adapted to tea culture. Our annual importations are valued at \$13,000,000, nearly all of which comes from China and Japan. The possibilities of the new industry are great.

### Book Reviews

Something new in the line of books has just come to our table. It is a little volume entitled "Over One Hundred Ways to Work One's Way Through College." It is written by Selby A. Morgan of the Ann Arbor Michigan, High School, and is designed to furnish practical suggestions to young men and women, without means, who wish to work their way through college or university. Mr. Moran has certainly covered the field thoroughly, having given over one hundred practical ways by which ambitious young people have actually earned all of their expenses while obtaining a college or university training. The various practical methods by which one may earn a college education cover such a wide range that anybody can find in it some way especially suited to him. Scores of simple methods of which one would seldom think are given and instances are cited of young men and women who have actually earned a college education in these various ways. With such a book the young man or woman who has health and no one dependent upon him can easily solve the important question of a college education. The presidents of over one hundred of the leading colleges and universities in this country have ordered copies of the book. The University Press, Ann Arbor, Michigan. Price, \$1.

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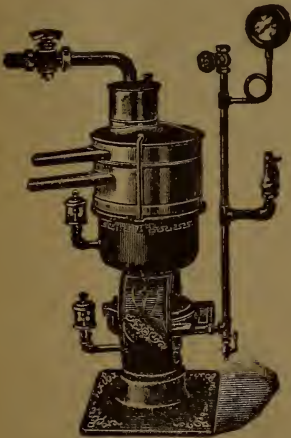
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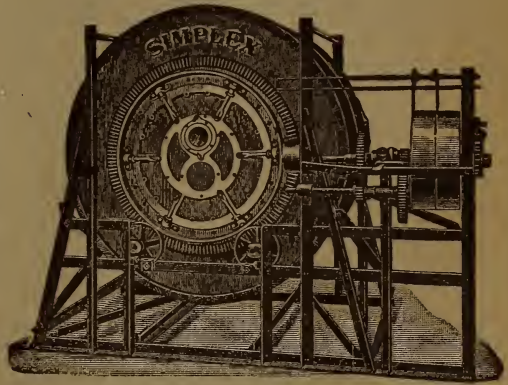
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